



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/645,614

08/22/2003

Norimasa Sohmiya

241850US3

8273

22850

7590

03/23/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

CHEN, SOPHIA S

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/645,614

Applicant(s)

SOHMIYA ET AL.

Examiner

Sophia S. Chen

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 7-11, 16, 17, 23-27, 32, 33, 56 and 57 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37-55 is/are allowed.
- 6) ☒ Claim(s) 1-4, 12-14, 18-20, 28-30 and 34-36 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 15, 21, 22 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/24/03, 1/14/04, 3/7/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Reply filed 1/10/05

1. Applicant's election with traverse of Group I (should be Species I) in the reply filed on 1/10/05 is acknowledged. The traversal is on the ground(s) based on the decision of the Director of the U.S.P.T.O, described in *In re Kase*. This is not found persuasive because the decision of *In re Kase* is not applied to the species restriction.

Applicants argue "The *Kase* decision states that if no reasons are given to show why claims are independent and/or distinct other than a statement that the claims are directed to a different invention, then the Restriction Requirement is improper and should be withdrawn. See *Kase* at 1064." The image forming apparatus of Species I can be a standalone machine without a scanner disclosed in Species II. A first and second peeler can be used in different type of image forming apparatus other than the one in Species I, also, the apparatus of Species I do not need to have peeler to perform an image forming operation. The similar reasons applied to the rest of species. For example, the apparatuses of Species I through V do not have mark sensor as disclosed in Species VI. Since each species is independent and distinct, the species restriction is proper.

Applicants also disagree with the conclusion stated on page 2, paragraph 2 of the Office Action dated 12/8/04. Applicants are right that *In re Kase* is applied to method and apparatus claims not to product/process claims. However, *In re Kase* does not state the decision of *In re Kase* can be applied to the species restriction. Nothing in the opinion states that the holding is to be read so broadly.

Applicants believe the holding of *In re Kase* requires that reasons be provided for all restriction requirements, regardless if they are between species, between product and process claims, or for any other reason. As no reasons were given in the Restriction Requirement as to why the claims are independent and/or distinct, applicants believe that a full examination on the merits of Claims 1-57 be conducted. Since the Examiner has provided explanations why each species is independent and/or distinct (see above), the species restriction is proper.

The requirement is still deemed proper and is therefore made **FINAL**.

2. The applicants incorrectly include claims 7 through 11 and 23 through 27 in species I because the limitation of "the image forming agent --- is cooled off below said melting point or said softening point at said contact position" claimed in claims 7 and 23 is disclosed in Figure 12 (directed to Species IV). Therefore, claims 7 through 11 and 23 through 27 are withdrawn from consideration.

3. Since claim 37 is allowable over the prior art of record, non-elected claims 41-44 and 46-51 are rejoined. Overall, claims 1-6, 12-15, 18-22, 28-31, and 34-55 are examined, and claims 7-11, 16, 17, 23-27, 32, 33, 56, and 57 are withdrawn from consideration.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 5M, 5C, and 5K (page 21, line 7). Corrected drawing sheets in compliance

with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 354 (Figure 9) and P0 (Figures 3 and 12). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because of the following informalities:

- a. Reference character "A" has been used to designate "a member" (page 24, line 14, etc.), "an arrow" (page 32, line 16 and Figure 6), and "a direction" (Figures 1, and 6, etc.; next to reference numeral 35).
- b. Reference character "B" has been used to designate "a member" (page 24, line 14, etc.) and "an arrow" (Figure 6).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
8. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

Art Unit: 2852

requested in correcting any errors of which applicant may become aware in the specification.

9. The disclosure is objected to because of the following informalities:

- a. Page 23, line 21, "20" should be "21".
- b. Page 34, line 13, "261" should be "361".
- c. Page 35, line 13, "367" should be "357".
- d. Page 58, line 8, "102" should be "201".
- e. Page 58, line 9, "102" should be "201".

Appropriate correction is required.

Claim Objections

10. Claim 1 is objected to because of the following informality: line 7, "at last" should be "at least". Appropriate correction is required.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1-4, 13, 19, 20, 29, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. (JP 2002-040821 A) in view of Tomita (US Pat. Pub. No. US 2001/0051057 A1).

Nakajima et al. discloses an image forming method and apparatus, comprising: the steps of forming a first toner image on an image carrier 10, forming a second toner image on the image carrier 10, and executing simultaneous image transfer and fixation that transfers the first toner image to a first surface of a recording medium and fixes the first toner image and, at the same time, transfers the second toner image to a second surface of the recording medium and fixes the second toner image (paragraphs [0012] through [0015] and Figure 1), the simultaneous image transfer and fixation comprising: heating with heating means 18, 19 a contact position where a first belt 16 and a second belt 20, endless moving in a same direction at least at a position where the first belt 16 and second belt 20 face each other, contact each other (Figure 1); transferring the first toner image from the image carrier 10 to the first belt 16 and heating the first toner image at the contact position to thereby transfer the first toner image to the second belt 20 (paragraph [0013]); and transferring the second toner image from the image carrier

10 to the first belt 16; and heating, at the contact position, the first toner image carried on the second belt 20 to thereby transfer the first toner image to the first surface of the recording medium and fix the first toner image and, at the same time, heating the second toner image carried on the first belt 16 to thereby transfer the second toner image to the second surface of the recording medium and fix the second toner image (paragraphs [0013], [0015], and [0017]).

Nakajima et al. further discloses an agent storing section (development section) storing an (specified) image forming agent (paragraph [0010]); toner image forming means (development section) for forming a toner image on the image carrier 10 by using the image forming agent (paragraph [0010]); a first heating member 18 configured to heat the contact position from an inside surface of the first belt 16; a second heating member 19 configured to heat the contact position from an inside surface of the second belt 20 (Figure 1); and first belt cooling means (roller) for cooling part of the first belt 16 moved away from the contact position, but not reached a position where the first belt 16 faces the image carrier 10 (paragraph [0014] and Figure 1).

Nakajima et al. differs from the instant claimed invention in not disclosing a heating temperature of the heating means is higher than a melting point or a softening point of the image forming agent by 5°C to 50°C, a heating range is so sized as to implement transfer and fixation of the first toner image and the second toner image to the recording medium at the heating temperature, and a computer configured to send control signals to the image forming apparatus.

Tomita discloses an image forming apparatus comprising a first belt 1a; a second belt 1b; a heating temperature (110°C or 140°C; page 7, TABLE 2) of the heating means is higher than a melting point or a softening point (5 to 70 degree C; page 5, paragraph [0072]) of the image forming agent by 5°C to 50°C (paragraphs [0050] and [0072]; TABLE 2); and a computer configured to send control signals to the image forming apparatus (paragraph [0027]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the heating temperature as taught by Tomita to the heating means of Nakajima et al. to selectively obtain a glossy image or a mat image (Tomita; paragraph [0017]).

Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the computer controlling mechanism as taught by Tomita to the image forming apparatus of Nakajima et al. to be able to perform network printing.

By combining Nakajima et al. and Tomita, it would have been obvious to have the heating range over which the heating means heats the contact position so sized as to implement transfer and fixation of the first toner image and the second toner image to the recording medium at the heating temperature (Tomita; paragraphs [0050] and [0072]; TABLE 2).

14. Claims 12, 18, 28, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. in view of Tomita as applied to claims 3 and 19 above, and further in view of Nakashima et al. (US Pat. Pub. No. US 2002/0159801 A1)

Nakajima et al. in view of Tomita, as discussed above, differs from the instant claimed invention in not disclosing the first belt and the second belt each are 1 μm to 400 μm thick, and the image carrier comprises a plurality of image carriers.

Nakashima et al. discloses an image forming apparatus comprising a first belt (intermediate transfer belt) 16; a second belt (electrostatic belt; Figure 1, no reference numeral assigned); a transfer and fixation contact position (Figure 1); the first belt 16 being 1 μm to 400 μm thick (5 to 50 μm ; paragraph [0118]); and the apparatus having either an image carrier 10 (with four developing devices; Figure 4) or a plurality of image carriers 11, 12, 13, 14 (Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the belt thickness as taught by Nakashima et al. to the first belt and second belt of Nakajima et al. in view of Tomita so as to reduce thermal capacity (Nakashima et al.; paragraph [0118]).

Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the plurality of image carriers as taught by Nakashima et al. in place of the single image carrier of Nakajima et al. in view of Tomita because of same functionality for forming color images.

15. Claims 14 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. in view of Tomita as applied to claims 13 and 29 above, and further in view of Omata et al. (US Pat. Pub. No. US 2002/0090236 A1)

Nakajima et al. in view of Tomita, as discussed above, differs from the instant claimed invention in not disclosing the first belt cooling means comprises a heat pipe.

Omata et al. discloses an image forming apparatus comprising a cooling means 16 may use any suitable cooling systems, for example, a heat pipe (paragraph [0056]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the heat pipe as taught by Omata et al. in place of the cooling roller of Nakajima et al. in view of Tomita because of the same functionality for cooling the belt.

Allowable Subject Matter

16. Claims 37-55 are allowed.

17. Claims 5, 6, 15, 21, 22, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. The following is a statement of reasons for the indication of allowable subject matter: Claims 37 and 53 are allowable over the prior art of record because the prior art of record does not teach or suggest a coefficient of thermal expansion of the first image carrier and a coefficient of thermal expansion of the second image carrier are selected such that a difference between a path length of the first image carrier and a path length of the second image carrier varies within an allowable range within a possible temperature range of the first image carrier and the second image carrier, in combination with the remaining claimed limitations.

Other Prior Art

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sakamoto (US Pat. Pub. No. US 2003/0035665 A1) discloses an image forming apparatus comprising a heat pipe.

Suzuki et al. (US Pat. Pub. No. US 2003/0235442 A1) discloses an image forming apparatus comprising a first belt; a second belt; a plurality of image carriers; a first heating member being disposed inside the first belt; a second heating member being disposed inside the second belt; a first cooling means; and a first belt cleaning member.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (571) 272-2133. The examiner can normally be reached on M-F (7:00-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2852

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sophia S. Chen
Primary Examiner
Art Unit 2852

Ssc
March 21, 2005